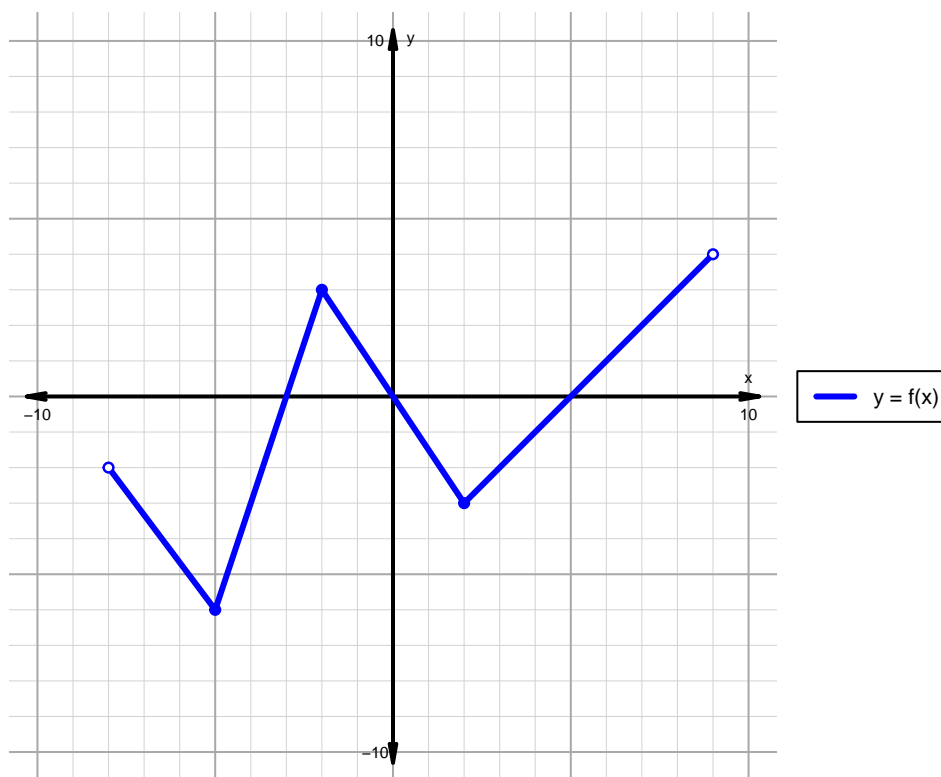


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Intervals, Transformations, and Slope Solution (version 145)**

1. The function  $f$  is graphed below.

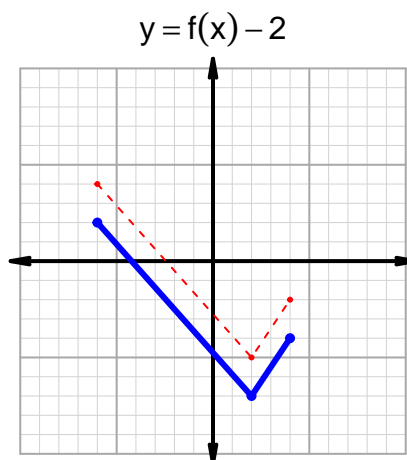
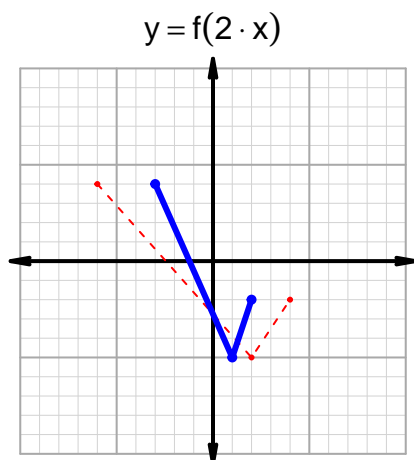
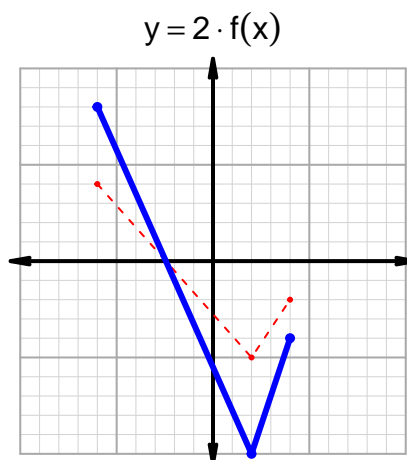
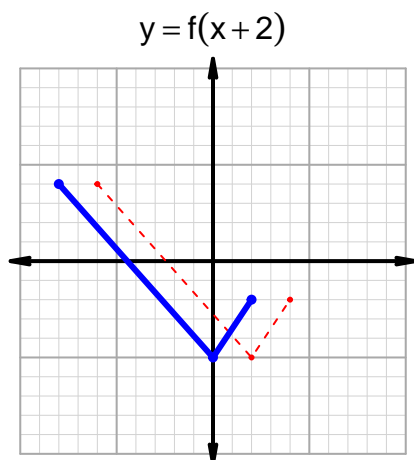


Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-3, 0) \cup (5, 9)$
Negative	$(-8, -3) \cup (0, 5)$
Increasing	$(-5, -2) \cup (2, 9)$
Decreasing	$(-8, -5) \cup (-2, 2)$
Domain	$(-8, 9)$
Range	$(-6, 4)$

## Intervals, Transformations, and Slope Solution (version 145)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 25$  and  $x_2 = 67$ . Express your answer as a reduced fraction.

$x$	$g(x)$
25	88
40	25
67	40
88	67

$$\frac{f(67) - f(25)}{67 - 25} = \frac{40 - 88}{67 - 25} = \frac{-48}{42}$$

The greatest common factor of -48 and 42 is 6. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-8}{7}$$